

## CENTRAL INTELLIGENCE AGENCY

## INFORMATION REPORT

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SECURITY INFORMATION

50X1-HUM

COUNTRY USSR/Satellites  
SUBJECT NII-160, Fryazino

REPORT

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REFERENCES

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(FOR KEY SEE REVERSE)

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III. APPENDICES

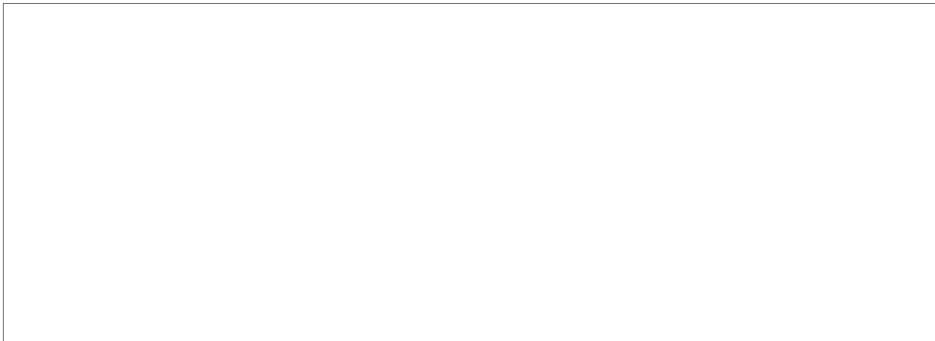


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Appendix 'C'

Electronics

- See separate sheet  
attached



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Appendix 'G'

Scientific Order of Battle (a) Establishments -  
o information

(b) Personalities -  
See separate sheet  
attached

Appendix 'H'

Miscellaneous

- See separate sheet  
attached



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Appendix 'C'

ELECTRONICS2. Analogue Computer

In January 1950 an analogue computer was delivered to the Institute together with a young female who was supposed to service the equipment when it went wrong. In actual fact, she did not even have an elementary knowledge of the principle of the computer. The computer was designed by GUTENMACHER of the MOSCOW ACADEMY, and is described in his book "ELECTRICAL MODELS", which was published in MOSCOW in 1949 or 1950 and is regarded by the Russians as a classic. The computer had been manufactured in PENZA, which is near the VOLGA, south of GORKI. It was No. 4 of a production batch and contained about 30 valves.

[redacted] there was nothing revolutionary about it; the principle was good but the instrument would not work due to poor mechanical engineering. The drum switch by which the parameter values were fed in could not be properly aligned, and the relays stuck continually. Each of the six stages contained two valves, type 6P6, made in PENZA. Only valves made in PENZA fitted into the computer and when 6P6's of FRYAZINO production were tried they always got broken when the cover was closed. This was apparently due to the greater length of envelope of the FRYAZINO valves. There were frequent visits by service engineers from MOSCOW, but the computer was still not functioning properly.

[redacted] another computer of the same series was located near MOSCOW. The computer was intended to solve a system of six simultaneous homogeneous linear differential equations of first order.

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Appendix 'C' [redacted]

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[redacted] STEINEL designed a stabilized power pack for this computer.

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[redacted] any detailed paper on a specific computer by any of the ex N.I.I. 160 Germans was probably 'lifted' from GUTENMACHER's book referred to above.

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### 3. Pulse Generator

In January 1950 there was delivered to N.I.I. 160 the pulse generator section of a ground radar set. This was of Russian manufacture, components and all. It was common gossip that this formed part of a Russian copy of an American 10cm fire control radar. It remained available to the Germans for only three weeks for the purpose of testing magnetrons.

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[redacted] About 50 per month 725A's were produced in the magnetron laboratory. With regard to attempts at making tuneable pulse magnetrons, they had great trouble in coupling the load to the output, due to their inability to use direct coupling employing fused-quartz. The pulse unit had an early serial number and had a built in time clock showing that it had only run for a very few hours before arriving at FRYAZINO. After being delivered at the Institute, two Russians from MOSCOW came to put the unit into working order; this they did in 1½ days and thereafter the generator worked satisfactorily. One of the visitors appeared to be a trained engineer of university standing; the other were a cloth cap and seemed to be more in the nature of a mechanic. After three weeks, EUSMANOVSKIY [redacted] took the generator to his laboratory and the Germans did not see it again.

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### 4. Theoretical Department for Radio-Physics N.I.I. 160

[redacted] the staff consisted of one Chief, one Russian Engineer and two Russians for mathematical calculating work. [redacted] in December 1950, it consisted of one Chief, four Russian Engineers, five German Engineers, five or six Russian Mathematicians and one Political Chief (Politruk). The calculating machines used were of German post-war production. The typewriters were of German pre-war production, with Russian characters. The paper for written work was delivered in large rolls (1½ m wide) and was of very poor non-standard quality.

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### 5. HEINRICH HERTZ INSTITUTE

The Institute Head, HACHENBERG, agrees tasks with the Head of the Academy of Sciences. All work is of a purely scientific character. The departments are as follows:-

- (i) Acoustics
- (ii) Physical problems, e.g. horological matters involving synchro-clocks.
- (iii) Radio propagation.
- (iv) Television.
- (v) Theoretical.

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[redacted] Test gear in the Institute was of good quality and came from OSV and the RFT's in Saxony. Delivery dates for new equipment are most uncertain. The reason given to those who complained being that practically all production goes to the USSR. Equipment such as

/screws,

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Appendix 'C' [redacted]  
[redacted]

screws, sheet iron, sheet brass and HF iron cores is of poor quality. The Institute has great difficulty in getting any HF cores from DRALOWID WERN, TELTOW. [redacted] the condensers produced by RFT GERA are surprisingly good quality.

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6. Miscellaneous

- (i) RIGA has a domestic receiver plant which produces a receiver, 50X1-HUM  
selling for 800 Roubles. [redacted] this plant supplies  
30-40% of all domestic receivers for the USSR.

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- (ii) [redacted]  
after leaving MONINO, BUSCHBECK had to do a lot of experimental  
night flying [redacted]

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- (iii) [redacted] HERTZ [redacted] has recently moved  
north and is buying a television set.

- (iv) ROSENSTEIN and Dr. Ing. GELHARDT (ex N.I.I. 160) worked for the  
DDR post office on VHF propaganda problems.

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Appendix 'G'

SCIENTIFIC ORDER OF BATTLE

PERSONALITIES

RUSSIAN

LUKOSCHKOW - Chief of the Theoretical Department in N.I.I. 160.  
GOTTHOLF - Engineer in Theoretical Department, N.I.I. 160.  
ZEITLIN - Engineer in Theoretical Department. 50X1-HUM  
WODABOSS - Engineer in Theoretical Department.  
BAZEV - Engineer in Theoretical Department

GERMAN

Dr. MOLLVO - ex LENINGRAD, works at HEINRICH HERTZ INSTITUTE on  
hydrological problems.  
Dr. WEIZENMILLER - ex GORKI, now at HEINRICH HERTZ INSTITUTE.  
Dr. PRAXMARER - ex LENINGRAD, now at HEINRICH HERTZ INSTITUTE.

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Appendix (H)

MISCELLANEOUS

In the Summer of 1952 Professor HACHENBERG visited Hungary and Roumania, primarily for the purpose of attending an industrial fair in BUCHAREST. [REDACTED] HACHENBERG placed the living 50X1-HUM standard in the Satellites as follows:-

Czechoslovakia, ROZ Germany, Hungary, Roumania

in that order.

HACHENBERG found Catholic feeling still very strong in Hungary, and estimates that only 6-10% of the population are Communists.

2. Professor WILLERS of the TECHNISCHE HOCHSCHULE, DRESDEN, wants to start work on the development of rotating drum digital computers, using transistors. He finds, however, that there is an almost complete lack of germanium for his purpose. 50X1-HUM

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